

RHAPSODY FOR PIANO AND SMALL ORCHESTRA

Yong Hee Ahn-Kim, B.M., B.S., M.ED

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APPROVED:

Philip G. Winsor, Major Professor
Lester Brothers, Minor Professor
Joseph Rovin, Committee Member
Joseph Klein, Chair of the Department of
Composition
James C. Scott, Dean of the College of
Music
C. Neal Tate, Dean of the Robert B.
Toulouse School of Graduate Studies

Ahn-Kim, Yong Hee, *Rhapsody for Piano and Small Orchestra*, Master of Music (Composition), December 2001, 37pp., 25 examples, 8 tables, bibliography, and *Rhapsody for Piano and Small orchestra*, 34pp (score).

Rhapsody for Piano and Small Orchestra is a one-movement composition in a concerto fashion for seventeen players, and is about nine minutes in duration. The overall form of this work is A B C D E D¹ C¹ B¹ A¹. This work contains various hidden compositional devices such as the golden section principle and a palindrome structure. These devices are applied not only to the structure of the work, but also to the pitch-related and rhythm-related matters. Also, certain melodic and rhythmic cells are employed for each section in the developmental procedure of that section almost exclusively. Since this work is a concerto-like piece, there are two cadenza-like passages for the piano with an accompanying solo instrument, which plays the obbligato passage. The following essay addresses the form, pitch materials, harmony, rhythm and technical difficulties, orchestration, and variant elements between the corresponding sections used in this work.

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CHAPTER 1

INTRODUCTION

The purpose of this essay is to examine, identify, and trace the various compositional devices found in *Rhapsody for Piano and Small Orchestra*. *Rhapsody for Piano and Small Orchestra* is a one-movement composition in concerto fashion. It employs 1 flute, 1 oboe, 1 clarinet, 1 bassoon, 1 trumpet, timpani, 3 first violins, 2 second violins, 2 violas, 3 cellos, and a piano. A total of seventeen players are needed for the performance of this work. The score is thirty-seven pages long and the music is approximately nine minutes in duration.

This essay consists of an introduction, six main chapters, and a summary. The work could possibly be subtitled “The Joy of Hidden Structures,” because various compositional devices are hidden throughout the composition. The hidden formal features that apply to the overall structure of this work include a palindrome structure and the golden section principle. Form will be discussed in Chapter 2 with more detail. Chapter 3 deals with the pitch relationships, such as the construction of melodies and use of scales. Chapters 4, 5, and 6 examine harmony, rhythmic and technical difficulties, and orchestration respectively.

Chapter 7 examines the variant elements between each corresponding sections in the arch form. Chapter 8 serves as a summary. In the relevant chapters special attention is given to the melodic and rhythmic cells that are the basis for the construction of the work, as they are constructed using the unifying factor: palindrome and the golden ratio.

CHAPTER 2

FORM OF *RHAPSODY FOR PIANO AND SMALL ORCHESTRA*

Form is the most important issue for the creation of this work. Many kinds of formal devices were considered before the composer wrote the music. “Symmetry” could be one of the representative words for the formal features of this work because the composer deliberately tries to apply many kinds of symmetrical considerations. Another important feature for the structure of this work is the application of the “Golden Section Principle.” This “principle” is applied to the design of the measure numbers of the sections, and the total number of measures in all.

For the external structure of *Rhapsody for Piano and Small Orchestra*, the form A B C D E D' C' B' A' is employed. This kind of structure is sometimes called a “Reflective Symmetrical Form,” since the middle E section functions as an axis. Also, the names “Arch Form” or “Palindrome Form” can be applied to designate this kind of structure. As mentioned above, the repetitive sections (A', B', C', and D') are not literal repetitions but varied ones. Many important composers have utilized symmetrical forms.

Bèla Bartók's *Music for Strings, Percussion, and Celesta* is considered to be a composition of major importance in the first half of the 20th century; the most significant unifying factor for this composition is symmetry. Compared with Anton Webern's *Variations for Piano*, Op. 27, both are constructed using intricate palindrome structures. Many composers choose the palindrome and arch forms because, “symmetry can be and

has been used as a powerful constructive principle, tying together several simultaneous levels of a compositional superstructure.”¹

Luca Pacioli (1445-1517) in his *Divina Proportione (On Divine Proportion)* wrote about the “Golden Section” also called the “Golden Mean” or the “Divine Proportion:”

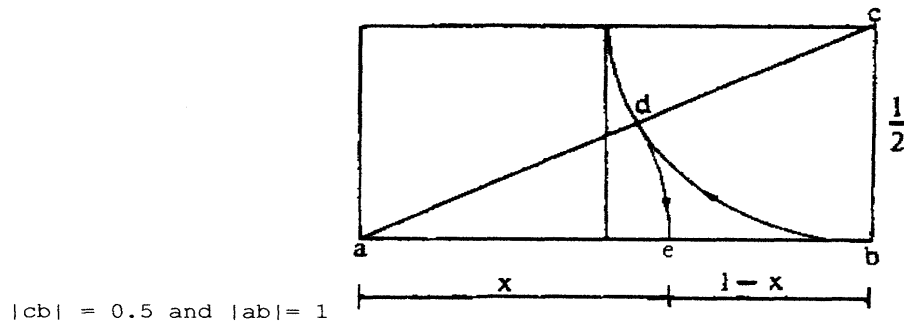
$$\begin{array}{c} \text{A} \quad \text{M} \quad \text{B} \\ \hline | \quad 1-x \quad | \quad x \quad | \end{array}$$

The line AB is divided at point M so that the ratio of the two parts, the smaller to the larger (AM: MB), is the same as the ratio of the larger part to the whole (MB: AB). If AB is of length 1 unit, and we let MB have length x, and AM 1 – x, then the definition above can be represented as the ratio of 1 – x: x = x: 1 or expressed as an equation:

$$\frac{1-x}{x} = \frac{x}{1} \text{ which simplifies to } 1-x = x^2$$

¹ From the website: <http://cc.pima.edu/users/larry/diss7.htm>, consulted on 10-24-01..

We can see the formula for the golden ratio illustrated by this diagram provided on the internet:²



$$1^2 + \left(\frac{1}{2}\right)^2 = \frac{5}{4} = \left(\frac{\sqrt{5}}{2}\right)^2 = |ac|^2$$

We draw a circle with the center **c** and with radius $|cb|$. The circle intersects the diagonal $|ac|$ in **d**.

Now we draw another circle with center **a** and radius $|ad|$ which intersects $|ab|$ in **e**.

$$|ad| = x = \frac{\sqrt{5}}{2} - \frac{1}{2} = \frac{\sqrt{5}-1}{2}$$

The value for x is 0.618603398... . The approximate ratio of the golden section is 0.61803398...: 1.³

Many books on oil painting and water color will point out that it is better to position objects not in the center of the picture but to one side or about

² From the website: <http://mathsforeurope.digibel.org/Gulden.htm>, consulted on 10-24-01.

³ From the website: <http://www.mcs.surrey.ac.uk/Personal/Rknot/Fibonacci/FibInArt.html>, consulted on 10-24-01.

one-third of the way across, and to use lines which divide the picture into thirds. This seems to make the picture design more pleasing to the eye and relies again on the idea of the golden section as being ideal. Researchers have found the golden ratio principle in the music of Obrecht, Bach, Mozart, Beethoven, Debussy, Bartók, Satie, and many others.

For example, David Green in his book *Form in Tonal Music: An Introduction to Analysis* 2nd ed., analyzes the twenty variations of Bach's *Passcalgia*, and finds that, "...grouping...these variations manifests on a large scale the symmetry of the 'golden mean.'" He discusses the relationship of the sections in context of the numbers 21, 13, 8, and 5:

The theme appears a total of twenty-one times. The largest group consists of thirteen appearances. The remaining eight are divided into two groups, one of three, the other of five. In length part two is to part three as part three is to their sum (approximately, 3 is to 5 as 5 is to 8); and the sum of parts two and three is to part one as part one is to the whole (8 is to 13 as 13 is to 21).⁴

Dr. Sever Tipei, Professor of Music at the University of Illinois, also tells us in a letter to a student that the golden mean is found in compositions by these early composers because it is a "natural" way of dealing with time. While they probably used it intuitively, he also mentions that composers such as Bartók, Debussy, and Xenakis may have made a deliberate attempt to apply the golden ratio and Fibonacci series to their music.⁵

⁴ Explanation of the use of the golden section in the 20 variations of J. S. Bach's *Passcalgia*, in David Green book: *Form in Tonal Music: An Introduction to Analysis* 2nd ed.

⁵ From the website: <http://web.hep.unic.edu/home.karliner/golden.html>, consulted on 10-24-01.

The golden section principle is applied in many ways throughout *Rhapsody for Piano and Small Orchestra*. Its application pertains to the proportions (both internal and external), and symbolically to the rhythmic cells (see Chapter 4). Subsequently, it is almost impossible to apply the exact ratio of the golden section in music because the numbers are not simple enough. To apply the golden section more easily, the composer follows the numbers found in the “Fibonacci series.”⁶ Following the numbers of the Fibonacci series is the closest way to apply the golden ratio. The important numbers that the composer chose for the structure of the work are 13, 21, 34, 55, 89, and 144. The total number of measures of this work is 144.

The different sections of the work are divided following numbers derived from Fibonacci numbers, such as 21, 34, 55, 68, 102, 123, and 136. The numbers 68, 102, 123, and 136 do not appear in the original “series;” however, those numbers are closely related with numbers in the series, and also represent golden ratios. For example, the number 68 is achieved by adding 13 to 55. Table 1 shows how those numbers are made.

Table 1. The Method of Making Numbers Which Do Not Appear In Fibonacci Series

68	102	123	136
55+13	89+13	102+21	123+13

As can be seen in Table 1 the numbers 68 and 102 are made by adding 13 to the numbers

⁶ The elements of the sequence of numbers 1,1,2,3,5,8,13,21,34,55,89,144,..., each of which is the sum of the previous two numbers. The interesting properties of these numbers were first noted by the medieval Italian mathematician Leonardo Pisaro.

55 and 89 respectively. The number 123 is derived by adding 21 to 102, which is calculated by adding 13 to 89. The number 136 is made by adding another 13 to the previous number (123) [$123 + 13 = 136$]. Table 2 shows the overall measure number structure of the work.

Table 2. The Overall Form and the Measure Number Structure of *Rhapsody for a Piano and Small Orchestra*

Section	A	B	C	D	E	D'	C'	B'	A'
Measure	1-21	21-34	34-55	55-68	68-89	89-102	102-123	123-136	136-144
Nr. Of Measures	21	13	21	13	21	13	21	13	8

Table 2 shows us that the golden ratio 21: 13 applies to any two consecutive sections except sections B' and A'. For example, the ratio that results when the total number of measures in sections A and B are placed side by side is 21: 13, the same is found with sections C: D, E: D', and C': B'. For the last two sections B' and A' another golden ratio 13: 8 is applied. Section A' also serves as a coda.

Section C contains a cadenza for the piano, which is 13 measures long. This section itself (C) is 21 measures long. The resulting ratio for the section and its cadenza is 21: 13, a golden ratio. The ratio between the cadenza and the rest of the measures in the section is 13: 8, also a golden ratio.

The phrase structure of this work is relatively simple compared to the structural scheme of the form. The composer tries to make the phrase structure simple to neutralize

the complexity of mixing palindrome form with golden ratios. Table 3 shows the whole phrase structure of the work. The phrase structures for sections A, C, and C' are simple and identical, representing $4 + 4 + 4 + 4 + 5$. Sections D and D' show another simple phrase structure ($4 + 4 + 5$).

Sections B and B' have a structure of $7 + 6$ and $6 + 7$ respectively. The only section showing complexity and considerable irregularity in phrase structure is section E, which is represented by $3 + 3 + 4 + 6 + 5$. The last phrases of sections A, C, D, E, D', and C' are 5 measures long because one extra measure is needed for modulatory functions.

Table 3. The Phrase Structure of *Rhapsody for a Piano and Small Orchestra*

Section	Nr. Of Ms.	Phrase Structure
A	21	$4+4+4+4+5$
B	13 (12)	$7(6)+6$
C	21	$4+4+4+4+5$
D	13	$4+4+5$
E	21	$3+3+4+6+5$
D'	13	$4+4+5$
C'	21	$4+4+4+4+5$
B'	13	$6+7$
A'	8 (9)	$4+4(5)$

CHAPTER 3

PITCH RELATIONSHIP

For the construction of melodies in this work, special compositional devices such as serial technique are not employed. However, the palindrome principle is applied to the pitch relationship among sections. Reflective symmetry is found in the beginning intervals of each section. The composer deliberately starts each section by expanding the interval of the previous section. Table 4 shows how this applies.

Table 4. Beginning Intervals of the Sections

Section	A	B	C	D	E	D'	C'	B'	A'
Interval	unison	2nd	3rd	4th	5th	4th	3rd	2nd	unison

As seen above, section A begins with a unison, section B with a second, section C with a third, section D with a fourth, and section E with a fifth. After that, the beginning intervals of the remaining sections decrease in the reverse order in which they came, resulting in a “palindrome” structure.

Another characteristic of the pitch relationship in this work is the use of certain melodic cells for the construction of melodies. Each section has its own melodic cell to be developed throughout. Table 5 illustrates, numbers, and shows which sections each melodic cell pertains to.

Table 5. Melodic Cells for Each Section

Section	Melodic Cell Number	Figuration
A (A')	1	(C- D- E)
B (B')	2	(E -C#-B)
C (C')	3	(E – C – G)
D (D')	4	(D-E-F-E-D-A)
E	5	(E – E – E)

The following examples show how these melodic cells are applied in the construction of melodies (examples 1 to 5).

Example 1. The application of melodic cell number 1,
mm. 1–2 (piano part) section A



mm. 136–137 (wind part) section A'

The image shows a musical score for the wind part, measures 136-137, section A'. The tempo is marked 'Allegro' and the dynamics are 'mf'. The score is written for four staves: Flute (Fl.), Oboe (Ob.), Bassoon (Bsn.), and Bassoon/Clarinet (B+ Cl.). Each staff features the melodic cell number 1 (C-D-E), with the Flute and Oboe playing a higher register and the Bassoon and Bassoon/Clarinet playing a lower register.

Example 2. The application of melodic cell number 2,
mm. 21–24 (first and second violins) section B

piu mosso (♩ = 92)

Vln. I

Vln. II

mf

mm. 122–125 (flute and oboe) section B'

piu mosso (♩ = 92)

Fl.

Ob.

Example 3. The application of melodic cell number 3,
mm. 34–35 (piano part) section C

Moderato

Pno.

f

mm. 106–107 (piano part) section C'

Pno.

mf

Example 4. The application of melodic cell number 4 in section D
mm. 55–58 (first and second violins)

This musical score snippet shows the first and second violin parts for measures 55 through 58. Both staves are marked with a forte (*f*) dynamic. The music features a continuous, rapid sixteenth-note melodic line in each part, with phrasing slurs indicating the application of a specific melodic cell. The key signature has one flat, and the time signature is 4/4.

Example 5. The application of melodic cell number 5 in section E
mm. 74–75 (strings)

This musical score snippet shows the string parts (Violin I, Violin II, Viola, and Violoncello) for measures 74 and 75. All parts are marked with a mezzo-forte (*mf*) dynamic. The Violin I and Violin II parts play a steady eighth-note pattern. The Viola and Violoncello parts play a slower, more spaced-out eighth-note pattern. The key signature has one flat, and the time signature is 4/4.

The third characteristic of pitch materials in this work is the application of various scales for each section. Predominantly, one kind of scale is utilized exclusively for a section. Table 6 illustrates this application.

Table 6. The Application of Various Scales for Each Section

Section	Scales employed
A (A')	Diatonic scale
B (B')	Whole tone scale
C (C')	Chromatic scale
D (D')	Pentatonic scale
E	Octatonic scale

The following examples are illustrating the applications of various scales in the music (examples 6 to 9).

Example 6. The application of the whole tone scale, mm. 131–133 (first and second violins)

The musical score shows two staves, Violin I and Violin II, in a key signature of two sharps (F# and C#). Both staves play a whole tone scale starting on D4. The scale is played in a descending fashion, with the first violin part having a fermata over the final note. The dynamic marking is mf (mezzo-forte).

Example 7. The application of the chromatic scale, mm. 34-35 (strings)

Musical score for strings (Violins I and II, Viola, and Cello) showing the application of the chromatic scale in measures 34-35. The tempo is marked *Moderato* (♩ = 80). The dynamics are marked *mf* for all parts.

Example 8. The application of the pentatonic scale, mm. 55-57 (first violin)

Musical score for the first violin showing the application of the pentatonic scale in measures 55-57. The dynamic is marked *f*.

Example 9. The application of the octatonic scale, measure 84 (piano)

Musical score for the piano showing the application of the octatonic scale in measure 84.

CHAPTER 4

HARMONY

The composer tries to apply clear tonality throughout the work. Even though C major could be the general tonality, various keys are employed. Some passages present tonal vagueness, and others use bitonality and even mutitonality. The overall tonal scheme is shown in Table 7.

Table 7. Tonal Scheme of *Rhapsody for Piano and Small Orchestra*

Section	Tonality
A (A')	C Major
B (B')	A Major + Bitonality
C (C')	C Major + Bitonality
D (D')	D minor
E	A minor + Mutitonality

Bitonality is introduced in sections B, C, and the corresponding sections of these (B' and C'). In section B, when the orchestral parts are playing in A major, the piano part performs C whole-tone scales. The resulting sound of this passage produces a bitonal effect of A major against C centered tonality with a whole-tone flavor (example 10). A clearly bitonal passage is found in section C in the piano cadenza, where the bassoon

plays an obbligato melody (example 11).

Example 10. Bitonality, *Rhapsody for Piano and Small Orchestra*, mm. 22-24

This musical score excerpt shows measures 22-24 of the *Rhapsody for Piano and Small Orchestra*. The score is written for a small orchestra and piano. The instruments and parts shown are Flute (Fl.), Oboe (Ob.), Trombone (Timp.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vcl.), and Piano (Pno.). The key signature is two sharps (F# and C#). The tempo/mood is marked 'piu mosso' with a metronome marking of 12-13. The music features a complex, bitonal texture with multiple melodic lines and rhythmic patterns. The piano part is particularly prominent, playing a fast, intricate melody. The orchestral parts provide a rich harmonic and rhythmic background.

Example 11. Bitonality, *Rhapsody for Piano and Small Orchestra*, mm. 46-49 (piano and bassoon parts)

This musical score excerpt shows measures 46-49 of the *Rhapsody for Piano and Small Orchestra*, focusing on the piano and bassoon parts. The score is written for Bassoon (Bsn.) and Piano (Pno.). The key signature is two sharps (F# and C#). The tempo/mood is marked 'mf' (mezzo-forte). The music features a complex, bitonal texture with multiple melodic lines and rhythmic patterns. The piano part is particularly prominent, playing a fast, intricate melody. The bassoon part provides a rich harmonic and rhythmic background.

The second half of section E presents a taste of mutitonicity. For example, in measure 81, G and B chords sound simultaneously above an A pedal (example 12). In measure 83, B and Bb chords are played alone with the A pedal in the timpani part (example 13).

Example 12. Multitonicity, measure 81

The image displays a musical score for measure 81, illustrating multitonicity. The score is written for a full orchestra and includes the following parts: Flute (Fl.), Oboe (Ob.), B♭ Clarinet (B♭ Cl.), Bassoon (Bsn.), C Trumpet (C Tpt.), Timpani (Timp.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), and Cello (Vcl.). The Piano (Pno.) part is also shown at the bottom. The score is written in 2/4 time and features a key signature of one sharp (F#). The multitonicity is achieved by having different instruments play different tonal centers simultaneously. For example, the Flute, Oboe, B♭ Clarinet, Bassoon, Violin I, Violin II, Viola, and Cello are playing a G major chord (G, B, D). The Timpani is playing an A pedal point (A). The Piano is playing a B major chord (B, D, F#). This creates a complex, dissonant texture where multiple tonalities are present at the same time.

Example 13. Multitonicity, measure 83

This musical score for measure 83 illustrates multitonicity by assigning different tonal centers to different instruments. The instruments and their respective notes are as follows:

- Fl.** (Flute): Treble clef, key signature of one flat (B-flat major/D minor), note B-flat.
- Ob.** (Oboe): Treble clef, key signature of one sharp (F# major/C# minor), note F#.
- B♭ Cl.** (B-flat Clarinet): Treble clef, key signature of two sharps (D major/A minor), note D.
- Bsn.** (Bassoon): Bass clef, key signature of one flat (B-flat major/D minor), note B-flat.
- B♭ Tpt.** (B-flat Trumpet): Treble clef, key signature of two sharps (D major/A minor), note D.
- Timp.** (Timpani): Bass clef, key signature of one flat (B-flat major/D minor), note B-flat.
- Vln. I** (Violin I): Treble clef, key signature of one flat (B-flat major/D minor), note B-flat.
- Vln. II** (Violin II): Treble clef, key signature of one sharp (F# major/C# minor), note F#.
- Vla.** (Viola): Bass clef, key signature of one sharp (F# major/C# minor), note F#.
- Vc.** (Violoncello): Bass clef, key signature of one flat (B-flat major/D minor), note B-flat.
- Pno.** (Piano): Grand staff (treble and bass clefs), key signature of two sharps (D major/A minor), notes D and A.






The score shows that instruments with the same key signature (B-flat major/D minor) play the same note (B-flat), while instruments with different key signatures play different notes (F# and D), creating a multitonic texture.

CHAPTER 5

RHYTHM AND TECHNICAL DIFFICULTY

Just as in the case of using melodic cells in chapter 3, each section of this work has its own dominant rhythmic pattern to be developed. For certain sections more than one rhythmic pattern is applied. Table 8 shows the “rhythmic cells.”

Table 8. Rhythmic Cells for Each Section

Section	Rhythmic Cells
A(A')	 A rhythmic cell consisting of a quarter note, followed by an eighth note and a dotted quarter note.
B(B')	 A rhythmic cell consisting of a quarter note, followed by an eighth note and a dotted quarter note, then a quarter note, and finally a beamed eighth note followed by a sixteenth note.
C(C')	 A rhythmic cell consisting of a beamed eighth note followed by a sixteenth note, then a quarter note, and finally a triplet of eighth notes.
D(D')	 A rhythmic cell consisting of a beamed eighth note followed by a sixteenth note, then a quarter note, and finally a dotted quarter note.
E(E')	 A rhythmic cell consisting of a beamed eighth note followed by a sixteenth note, then a quarter note, and finally a dotted quarter note.

The golden ratio is also applied to the rhythms of the work. The primitive ratios of 2: 3, 3: 5, and 5: 8 are adapted to the number of notes in a rhythmic group (figuration). Example 14 illustrates the rhythmic groupings in a figuration. In this case, the ratios are applied symbolically to show the golden section relationship, because the real-time values of the notes do not change; for example, duples, triplets, quintuplets, and the combining of the three do not change the real-time value of the notes. Various rhythms are employed for different parts of the work in order to change the moods and give variety to the content of the music. Rhythms in which triplets follow duples, and quintuplets follow triplets are very common. Even duples, triplets and quintuplets follow each other consecutively as seen in section B (measures 22-26).

Example 14. Rhythmic groupings



Although most parts of the work can be performed without much technical difficulty, several places demand virtuosity from the performers. First of all, the piano part has two cadenzas or “cadenza-like” passages that should be played with technical mastery (measures 42-54 and measures 114-118). Example 15 illustrates these cadenza passages. The string section has its own difficult passages in sections C and D, in which fast notes and wide skips are to be executed throughout (example 16). Also in section C, wind instruments have their turn to show off with fast chromatic passages (example 17).

Example 15. *Rhapsody for Piano and Small Orchestra*, measures 42-49 (first cadenza),
and 114-118, (second cadenza)

The image shows two systems of musical notation for piano. The top system is for measures 42-49, marked 'meno mosso (♩ = 70)' and 'f'. It features a complex, rapid piano part with many sixteenth and thirty-second notes, and a more rhythmic accompaniment in the bass. The bottom system is for measures 114-118, marked 'mf'. It continues the rapid piano part with similar intricate textures.

mm. 114-118 (second cadenza)

This image shows a single system of musical notation for measures 114-118. It includes a part for 'C Tpt.' (Cornet/Trombone) and 'Pno.' (Piano). The piano part is very dense and rapid, while the cornet part has a more melodic line with some grace notes.

Example 16. *Rhapsody for Piano and Small Orchestra*, measures 55-56 (first and
second violins)

The image shows two staves for Violin I and Violin II. Both parts are marked 'f' and feature a rapid, flowing melodic line with many sixteenth notes and slurs.

Example 17. *Rhapsody for Piano and Small Orchestra*, measures 34-36 (flute oboe and
clarinet)

The image shows three staves for Flute (Fl.), Oboe (Ob.), and Bass Clarinet (Bb. Cl.). The tempo is marked 'Moderato (♩ = 82)'. All three parts are marked 'mf' and play a similar melodic line with eighth and sixteenth notes.

CHAPTER 6

ORCHESTRATION

To create various sound effects, careful attention is drawn to the orchestration. Several contrasting sound groups are found in this work: winds, brass (trumpet), percussion (timpani), strings, and keyboard (piano). With these various instruments, the composer tries to make harmonious and competitive sounds by juxtaposing winds with brass, winds with strings, keyboard with brass, keyboard with percussion, and solo with tutti.

For harmonious unification, the composer deliberately doubles the melodies in several different instruments. For contrasting and competitive sound effects, different sound groups are set simultaneously against each other in counterpoint. In many cases, three different sound groups are juxtaposed or alternated. The beginning of section C shows how winds, strings and piano are competing with each other (example 18).

The piano cadenzas are treated slightly differently from the traditional sense. When a cadenza is performed, it is not played alone but with other solo instruments. For the first cadenza, the bassoon is employed to play the obbligato passage (example 19), and for the second cadenza, the trumpet takes the accompanying role. The D section is played by strings only, for a contrasting effect against the previous section, where all the parts except timpani and trumpet are engaged to perform. On the contrary, the following E section begins with winds only, and is eventually joined by all other instruments around the end of the section. This device of gradually adding more instruments

reinforces the big crescendo for the section.

Example 18. *Rhapsody for Piano and Small Orchestra*, measures 34-36,
(winds, strings and piano)

This musical score excerpt covers measures 34-36 of *Rhapsody for Piano and Small Orchestra*. It is marked *Moderato* with a tempo of $\text{♩} = 82$. The score is arranged for Flute (Fl.), Oboe (Ob.), Bassoon (Bn.), Clarinet (Cl.), Bass (Bss.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Cello (Vcl.), and Piano (Pno.). The piano part is marked *f* (forte). The woodwinds and strings are marked *mf* (mezzo-forte). The piano part features a complex, rhythmic pattern in the right hand, while the left hand provides a steady, rhythmic accompaniment. The strings play a sustained, rhythmic pattern in the right hand, while the left hand provides a steady, rhythmic accompaniment.

Example 19. *Rhapsody for Piano and Small Orchestra*, measures 46-49, first cadenza
(piano and bassoon)

This musical score excerpt covers measures 46-49 of *Rhapsody for Piano and Small Orchestra*, specifically the first cadenza. It is marked *Moderato* with a tempo of $\text{♩} = 82$. The score is arranged for Bassoon (Bsn.) and Piano (Pno.). The piano part is marked *mf* (mezzo-forte). The bassoon part features a complex, rhythmic pattern in the right hand, while the left hand provides a steady, rhythmic accompaniment. The piano part features a complex, rhythmic pattern in the right hand, while the left hand provides a steady, rhythmic accompaniment.

CHAPTER 7

VARIANT ELEMENTS BETWEEN THE CORRESPONDING SECTIONS

Even though the overall form of this work has a symmetrical structure, the corresponding sections (A' for A, B' for B, ...etc.) are not written literally in a repetitive manner. Although the general harmonic background and measure structures remain constant, there are many variant elements that differentiate the latter sections from the former. Different instrumentation, different rhythms, new melodic material, and exchange of voices are employed, among other differences.

Section A' is different from section A in that its piano part is enhanced by more notes and has different accompaniment patterns in the left hand. Secondly, the main thematic melody from section A is missing in section A', in which the new melody of the piano part is doubled by many instruments (example 20). Furthermore, the second phrase of section A' is totally different from that of section A because it functions as a cadential phrase.

Section B' is different from section B by the use of different instrumentations. The wind part of section B moves to the string part of section B', and the string part of section B goes to the wind part of section B' (except the cello part). The timpani is employed in the first half of section B, while the trumpet is used in section B' for the second half of the section. Also, the last phrases of both sections are written differently (example 21).

Example 20. *Rhapsody for Piano and Small Orchestra*, measures 1-2, section A and 136-137, section A'

Allegretto

Oboe *mp*

Violin I *mp*

Violin II *mp*

Viola *mp*

Cello *mp*

Piano *mf*

mm. 136-137, section A'

Allegretto (♩ = 100)

Fl. *mf*

Oboe *mf*

Bs. Cl. *mf*

Bsn. *mf*

Hr. Tpt. *mf*

Timps. *mf*

Viol. I *f*

Viol. II *f*

Viola *f*

Vcl. *f*

Pno. *f*

Example 21. *Rhapsody for Piano and Small Orchestra*, measures 30-33, section B and 132-135, section B'

This musical score excerpt shows measures 30-33 of section B. It features a piano (Piano) and a small orchestra. The piano part is in the bass clef, playing a rhythmic pattern of eighth and sixteenth notes. The orchestra includes strings (Violins I and II, Viola, Violoncello, and Contrabasso) and woodwinds (Flute, Oboe, and Clarinet). The woodwinds play a melodic line with slurs and ties. The strings provide a harmonic and rhythmic foundation.

mm. 132-135, section B'

This musical score excerpt shows measures 132-135 of section B'. It features a piano (Piano) and a small orchestra. The piano part is in the bass clef, playing a rhythmic pattern of eighth and sixteenth notes. The orchestra includes strings (Violins I and II, Viola, Violoncello, and Contrabasso) and woodwinds (Flute, Oboe, and Clarinet). The woodwinds play a melodic line with slurs and ties. The strings provide a harmonic and rhythmic foundation. The score includes dynamic markings such as *rit.* (ritardando) and *pp* (pianissimo).

There are five variant elements found in section C'. First, the piano part is slightly varied rhythmically with more notes to outline full chords. Secondly, different articulation is applied to the cello part. Example 22 will show these variants. Thirdly, the first phrase of the corresponding cadenza region in section C' is treated differently from that of section C. Fourthly, the last phrases of both sections are written totally different from each other for modulatory purposes.

The fifth variant is that the fast rhythmic figuration of the piano part moves to the wind section. The flute especially carries the fast downward motion second voice of the right hand part seen in first piano cadenza. However, the fourth phrase of this section (C') is devoted to a piano cadenza. This cadenza is different from the previous one in that it has a different rhythmic figuration, melody, and obbligato instrument (Example 23).

Example 22. *Rhapsody for Piano and Small Orchestra*, measures 34-36, section C, and 102-104, section C' (cello and piano parts)

The musical score for Example 22 consists of two staves. The upper staff is for the Cello (Vc.) and the lower staff is for the Piano (Pno.). Both staves are in 2/4 time, marked Moderato (♩ = 82). The Cello part is marked *mf* and the Piano part is marked *f*. The Cello part features a fast rhythmic figuration in the right hand, consisting of eighth and sixteenth notes, and a slower, more melodic line in the left hand, consisting of quarter and half notes. The Piano part features a fast rhythmic figuration in the right hand, consisting of eighth and sixteenth notes, and a slower, more melodic line in the left hand, consisting of quarter and half notes. The score shows measures 34-36 of section C and 102-104 of section C'.

Example 22. continued, mm. 102-104

Example 23. *Rhapsody for Piano and Small Orchestra*, measures 46-47, first cadenza, and 114-118, second cadenza, (piano part with obligato instruments)

mm. 114-118 (second cadenza)

There are three phrases in section D'. Each of these phrases has have their own varying elements that differentiate from section D. The first phrase of section D' is different in that the rhythm of the viola part is twice as fast. The second phrase is constructed with different rhythms, and new melodies. (Example 24). For the last phrase of D', new rhythms and melodies are introduced in the wind section (Example 25).

Example 24. *Rhapsody for Piano and Small orchestra*, mm. 59-62, section D, and
mm. 93-96, section D' (second phrase)

This musical score excerpt covers measures 59 to 62 of section D. It features four staves: Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), and Cello/Double Bass (Vcl.). The Violin I and II parts play rapid, ascending and descending sixteenth-note patterns, often beamed in groups of four. The Viola part provides a harmonic accompaniment with eighth-note figures. The Cello/Double Bass part plays a steady eighth-note pulse. The key signature has one flat (B-flat), and the time signature is 4/4.

mm. 93-96 (Section D')

This musical score excerpt covers measures 93 to 96 of section D' (second phrase). It features the same four staves as the previous excerpt: Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), and Cello/Double Bass (Vcl.). The Violin I and II parts continue with rapid sixteenth-note patterns. The Viola part features a more complex rhythmic pattern with eighth and sixteenth notes. The Cello/Double Bass part plays a steady eighth-note pulse. The key signature has one flat (B-flat), and the time signature is 4/4.

Example 25 mm. 63-66, section D, and mm. 97-100, section D' (last phrase)

Fl.

Ob.

Bb Cl.

Bsn.

Vln. I

Vln. II

Vla.

Vlc.

mm. 97-100 (Section D')

Fl.

Ob.

Bb Cl.

Bsn.

Vln. I

Vln. II

Vla.

Vlc.

CHAPTER 8

SUMMARY

Rhapsody for Piano and Small Orchestra is a one-movement composition in concerto fashion for seventeen players, and is about nine minutes long. As mentioned in the essay before, various compositional structures are hidden throughout the piece. Among them are a palindrome structure that applies to the form of the piece and to the pitch relationships between each section, and “golden ratios” that are utilized for some rhythms and employed to create the structure of each section.

The overall form of the composition is represented symmetrically as: A B C D E D' C' B' A'. The ratio between any two consecutive sections as represented by the measure numbers is 21: 13, a golden ratio. This ratio is applied throughout the piece following the numbers found in the Fibonacci series. Important divisions of the work are designated by the numbers derived from the Fibonacci series. The phrase structure of this work is relatively simple, to mitigate the complexity of mixing palindrome and golden sectional principles.

The palindrome principle is applied again to the pitch relationship among sections. Reflective symmetry is found in the beginning pitches (intervals) of the sections. The composer deliberately begins each section by expanding that of the previous section's by a second until it reaches a perfect fifth in section E. After that, the beginning intervals of the corresponding sections decrease creating a palindrome structure. Another characteristic of the pitch material is the use of certain melodic cells in the construction

of melodies for each section. The third feature of pitch relationship is the application of various scales for each section. Predominantly, one kind of scale is utilized in a section. Although the overall tonality of this work is very clear, several passages present tonal vagueness with bitonality or mutitonality. The tonal center of the piece is C.

Each section develops its own dominant rhythmic pattern, just like in the case of the melodic cells. Golden ratios are also employed for the construction of the rhythms in the work. Various rhythms are also combined to change the moods and give variety for the contents of the music.

The piano cadenzas are slightly different from the traditional sense. When a cadenza is played, it is not performed alone, but with another solo instrument, which takes the obbligato passage.

Although the overall form of this work is a symmetrical structure, the corresponding sections are not written in a literally repetitive manner. There are many variant elements that differentiate the later sections from the former ones. Different instrumentation, different applications of rhythms, new materials, and exchanging of voices are employed along with other features for this purpose.

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Rhapsody for Piano and Small Orchestra

Yong Hee Ahn-Kim

Allegretto

Flute

Oboe

Clarinet in Bb

Bassoon

Trumpet in C

Timpani

Allegretto

Violin I

Violin II

Viola

Cello

Allegretto

Piano

Yong Hee Ahn-Kim

This musical score is for the 'The Swan' movement from the Suite for Piano, Op. 20, by Camille Saint-Saëns. The score is arranged for a full orchestra and piano. The woodwind section includes Flute (Fl.), Oboe (Ob.), Bassoon (Bsn.), and Clarinet in C (C Tpt.). The string section includes Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vlc.), and Piano (Pno.). The percussion section includes Timpani (Timp.). The score is written in 3/4 time and features a key signature of one sharp (F#). The piano part is marked with a mezzo-forte (mf) dynamic. The score is divided into four measures, each containing musical notation for the respective instruments. The woodwinds and strings play a melodic line, while the piano provides a rhythmic accompaniment. The score is presented in a clean, professional layout with clear notation and instrument labels.

Fl.

Ob.

Bb Cl.

Bsn.

C Tpt.

Timp.

Vln. I

Vln. II

Vla.

Vlc.

Pno.

Fl.

Ob.

Bb Cl.

Bsn.

C Tpt.

Timp.

Vln. I

Vln. II

Vla.

Vlc.

Pno.

20

20

20

20

20

20

20

20

20

20

Fl.

Ob.

Bb Cl.

Bsn.

C Tpt.

Timp.

Vln. I

Vln. II

Vla.

Vlc.

Pno.

7

Fl.

Ob.

Bb Cl.

Bsn.

C Tpt.

Timp.

Vln. I

Vln. II

Vla.

Vlc.

Pno.

Moderato (♩ = 82)

mf

rit.

f

5

Fl.

Ob.

Bb Cl.

Bsn.

C Tpt.

Timp.

Vln. I

Vln. II

Vla.

Vlc.

Pno.

40

40

40

40

10

meno mosso (♩ = 70)

Fl.

Ob.

Bb Cl.

Bsn.

C Tpt.

Timp.

Vln. I

Vln. II

Vla.

Vlc.

meno mosso (♩ = 70)

meno mosso (♩ = 70)

loco

f

Pno.

11

Fl.

Ob.

Bb Cl.

Bsn.

C Tpt.

Timp.

Vln. I

Vln. II

Vla.

Vlc.

Pno.

mf

mf

Fl.

Ob.

Bb Cl.

Bsn.

C Tpt.

Timp.

Vln. I

Vln. II

Vla.

Vlc.

Pno.

50

50

50

50

50

Fl.

Ob.

Bb Cl.

Bsn.

C Tpt.

Timp.

Vln. I

Vln. II

Vla.

Vlc.

Pno.

The musical score for page 14, measures 1-3, is presented for a full orchestra. The instruments and their parts are as follows:

- Flute (Fl.):** Rests in all three measures.
- Oboe (Ob.):** Rests in all three measures.
- Bb Clarinet (Bb Cl.):** Rests in all three measures.
- Bassoon (Bsn.):** Plays a rhythmic pattern of eighth notes. Measure 1: G2 (half note), A2 (quarter note), B2 (quarter note), C3 (half note). Measure 2: D3 (half note), E3 (quarter note), F3 (quarter note), G3 (half note). Measure 3: A3 (half note), B3 (quarter note), C4 (quarter note), D4 (half note).
- C Trumpet (C Tpt.):** Rests in all three measures.
- Timpani (Timp.):** Rests in all three measures.
- Violin I (Vln. I):** Rests in all three measures.
- Violin II (Vln. II):** Rests in all three measures.
- Viola (Vla.):** Rests in all three measures.
- Violoncello (Vlc.):** Rests in all three measures.
- Piano (Pno.):** Features a complex, rapid melodic line in the right hand and a sustained bass line in the left hand. The right hand part is characterized by many accidentals and a fast tempo. The left hand part consists of a steady eighth-note pattern.

15

16

Fl.

Ob.

Bb Cl.

Bsn.

C Tpt.

Timp.

Vln. I

Vln. II

Vla.

Vlc.

Pno.

This musical score page, numbered 17, contains staves for the following instruments: Flute (Fl.), Oboe (Ob.), Bb Clarinet (Bb Cl.), Bassoon (Bsn.), C Trumpet (C Tpt.), Timpani (Timp.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vlc.), and Piano (Pno.). The woodwind and brass sections (Fl., Ob., Bb Cl., Bsn., C Tpt.) are currently silent, indicated by whole rests. The Timpani part features a rhythmic pattern of eighth notes and rests. The string section (Vln. I, Vln. II, Vla., Vlc.) is active, with Violins I and II playing rapid sixteenth-note passages, the Viola playing a slower melodic line, and the Cello providing a steady eighth-note accompaniment. A dynamic marking of *f* (forte) is present for the strings starting in the third measure. The Piano part is silent with whole rests. The key signature has one flat (Bb), and the time signature is 4/4.

Fl.

Ob.

Bb Cl.

Bsn.

C Tpt.

Timp.

Vln. I

Vln. II

Vla.

Vlc.

Pno.

Allegro (♩ = 110)

p

Allegro (♩ = 110)

Allegro (♩ = 110)

Detailed description of the musical score: The score is for a symphony orchestra. It consists of 11 staves. The first four staves are woodwinds: Flute (Fl.), Oboe (Ob.), Bb Clarinet (Bb Cl.), and Bassoon (Bsn.). The next three staves are brass: Cornet (C Tpt.), Timpani (Timp.), and Violin I (Vln. I). The next three staves are strings: Violin II (Vln. II), Viola (Vla.), and Violoncello (Vlc.). The final staff is Piano (Pno.). The key signature is one flat (Bb). The tempo is marked 'Allegro' with a quarter note equal to 110 beats per minute. The dynamics are marked 'p' (piano) for the woodwinds and strings in measure 4. The score shows measures 1 through 4. Measures 1-3 are mostly rests for the woodwinds and strings, with some activity in the strings. Measure 4 features a tutti entry for the woodwinds and strings, marked 'Allegro' and 'p'.

Fl.

Ob.

Bb Cl.

Bsn.

C Tpt.

Timp.

Vln. I

Vln. II

Vla.

Vlc.

Pno.

mf

mf

mf

mf

mf

mf

mf

mf

mf

mp

mf

22

Fl.

Ob.

Bb Cl.

Bsn.

C Tpt.

Timp.

Vln. I

Vln. II

Vla.

Vlc.

Pno.

This musical score page, numbered 23, features a full orchestral ensemble. The woodwind section includes Flute (Fl.), Oboe (Ob.), B-flat Clarinet (Bb Cl.), and Bassoon (Bsn.). The brass section includes Cornet in C (C Tpt.) and Trombone (Timp.). The string section consists of Violins I and II (Vln. I, Vln. II), Viola (Vla.), and Violoncello (Vlc.). The piano (Pno.) is at the bottom. The score is divided into four measures. The first two measures show the woodwinds and piano with various rests and melodic lines. The third and fourth measures show the woodwinds and piano with various rests and melodic lines. The brass and strings are mostly silent, indicated by whole rests. Dynamics include piano (p) for the woodwinds and piano (p) for the piano.

Moderato (♩ = 82)

90

Fl.

Ob.

Bb Cl.

Bsn.

C Tpt.

Timp.

Moderato (♩ = 82)

90

Vln. I

f

Vln. II

f

Vla.

f

Vlc.

f

Moderato (♩ = 82)

90

Pno.

Fl.

Ob.

Bb Cl.

Bsn.

C Tpt.

Timp.

Vln. I

Vln. II

Vla.

Vlc.

Pno.

The musical score for page 25, measures 1-4, is as follows:

- Flute (Fl.):** Rests in all measures.
- Oboe (Ob.):** Rests in all measures.
- Bb Clarinet (Bb Cl.):** Rests in all measures.
- Bassoon (Bsn.):** Rests in all measures.
- C Trumpet (C Tpt.):** Rests in all measures.
- Timpani (Timp.):** Measures 1-2: Quarter notes on G2 and F2. Measure 3: Quarter note on G2, half note on F2. Measure 4: Quarter note on G2, half note on F2.
- Violin I (Vln. I):** Measures 1-2: Sixteenth-note runs starting on G4, marked *p*. Measure 3: Sixteenth-note runs starting on G4, marked *p*. Measure 4: Sixteenth-note runs starting on G4, marked *p*.
- Violin II (Vln. II):** Measures 1-2: Sixteenth-note runs starting on G4, marked *p*. Measure 3: Sixteenth-note runs starting on G4, marked *p*. Measure 4: Sixteenth-note runs starting on G4, marked *p*.
- Viola (Vla.):** Measures 1-2: Quarter notes on G3, F3, E3, D3, marked *p*. Measure 3: Quarter notes on G3, F3, E3, D3, marked *p*. Measure 4: Quarter notes on G3, F3, E3, D3, marked *p*.
- Violoncello (Vlc.):** Measures 1-2: Quarter notes on G2, F2, E2, D2, marked *p*. Measure 3: Quarter notes on G2, F2, E2, D2, marked *p*. Measure 4: Quarter notes on G2, F2, E2, D2, marked *p*.
- Piano (Pno.):** Rests in all measures.

Fl. *f*

Ob. *f*

Bb Cl. *f*

Bsn. *f*

C Tpt. 100

Timp. 100

Vln. I *f* 100

Vln. II *f*

Vla. *f*

Vlc. *f*

Pno. 100

Fl.

Ob.

Bb Cl.

Bsn.

C Tpt.

Timp.

Vln. I

Vln. II

Vla.

Vlc.

Pno.

mp

mp

mp

f

27

This musical score is for a piece titled "The Rose Tree". It is arranged for a woodwind quartet (Flute, Oboe, Bassoon, and Clarinet in B-flat), a string quartet (Violin I, Violin II, Viola, and Violoncello), and a Piano. The score is written in 2/4 time and features a key signature of one sharp (F#). The woodwind parts are characterized by rapid sixteenth-note passages, often with slurs and ties. The string parts provide a harmonic foundation with sustained notes and moving lines. The piano part features a complex, rhythmic accompaniment with many sixteenth notes. The score is divided into four measures, with dynamic markings such as *mf* (mezzo-forte) and *f* (forte) indicating the volume. The woodwind parts are marked with *mf* in the second measure. The string parts are marked with *f* in the second measure. The piano part is marked with *mf* in the second measure. The score is written in a standard musical notation with a grand staff for the piano and individual staves for the other instruments.

Fl. *meno mosso* (♩ = 70)

Ob.

Bb Cl.

Bsn.

C Tpt. *f*

Timp.

Vln. I *meno mosso* (♩ = 70)

Vln. II

Vla.

Vlc.

Pno. *meno mosso* (♩ = 70)

30

piu mosso (♩ = 92)

Fl. *mf*

Ob. *mf*

Bb Cl. *mf*

Bsn. *mf*

C Tpt. *mf*

Timp. *mf*

Vln. I *mf*

Vln. II *mf*

Vla. *mf*

Vlc. *mf*

Pno. *mf*

Fl.

Ob.

Bb Cl.

Bsn.

C Tpt.

Timp.

Vln. I

Vln. II

Vla.

Vlc.

Pno.

33

This musical score page contains measures 130 through 133. The instruments are arranged in a standard orchestral layout. The woodwinds (Flute, Oboe, Clarinet in B-flat, Bassoon) and strings (Violin I, Violin II, Viola, Violoncello) are active throughout. The brass (Trumpet in C) and timpani are present but have rests in measures 130 and 131. The piano part is active in measures 130 and 131, with rests in 132 and 133. The score includes dynamic markings such as *mf* and *f*, and articulation like accents. Measure numbers 130, 131, 132, and 133 are clearly indicated at the beginning of their respective staves.

[illegible]

This image shows a page from a musical score, likely for a symphony. The score is written for a large ensemble, including woodwinds, brass, percussion, strings, and piano. The instruments listed on the left are Flute (Fl.), Oboe (Ob.), Bassoon (Bsn.), Clarinet in B-flat (Bb Cl.), Trumpet in C (C Tpt.), Timpani (Timp.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vlc.), and Piano (Pno.).

The score is divided into measures, with a large measure number '140' appearing at the top right. The music is written in a key signature of one sharp (F#) and a common time signature (C). The notation includes various musical symbols such as notes, rests, and dynamic markings like 'f' (forte) and 'piu. f' (pianissimo forte). The piano part (Pno.) is written in a grand staff (treble and bass clef) and features complex chordal textures and arpeggiated figures.

This musical score page, numbered 37, features a full orchestral ensemble. The woodwind section includes Flute (Fl.), Oboe (Ob.), Bassoon (Bsn.), and Clarinet in B-flat (Bb Cl.). The brass section consists of Cornet in C (C Tpt.) and Trombone (Timp.). The string section includes Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), and Violoncello (Vlc.). The piano (Pno.) is also present. The score is written in 4/4 time and features a key signature of one flat (B-flat). The music is characterized by long, sweeping melodic lines in the woodwinds and strings, often marked with *ff* (fortissimo). The piano part provides harmonic support with chords and arpeggiated figures. The page concludes with a double bar line.